



NAVAL SEA SYSTEMS COMMAND

CADRT

COMPUTER AIDED DEAD RECKONING TRACER



NAVAL SURFACE WARFARE CENTER, DAHLGREN DIVISION

DAHLGREN PANAMA CITY DAM NECK

Overview

The Computer Aided Dead Reckoning Tracer (CADRT) provides the capability to build and maintain a real-time, fused, tactical picture for watchstanders in the Combat Information Center (CIC). The CADRT will replace manual Dead Reckoning Tracer (DRT) plotting functionality with a graphically oriented, geographically based computer system. The hardware platform is a dual display system made up of a horizontally mounted large screen display and a 30° off axis small screen display.

CADRT will support contact management and situational awareness for Antisubmarine Warfare (ASW); Surface Warfare; Chemical, Biological, and Radiological (CBR) Defense; Search and Rescue; Mine Warfare; Naval Gunfire Support (NGFS); and Expeditionary Warfare.

The CADRT was developed with significant input from Fleet operators. Operating under a "match then extend" design concept, design engineers ensured that current capabilities were captured. Once this was achieved, the advantages of automation were brought to play to extend those capabilities.

The CADRT software architecture is based on the Defense Information Infrastructure Common Operating Environment. This software may be hosted on both Hewlett-Packard (HP) and SUN Microsystems hardware.

CADRT Data Fusion

CADRT develops the fused tactical picture with layers of information. The bottommost layers are land and ocean charts. Sensor coverage and intelligence form the next layers. These layers are then combined with tactical decision-aid graphics and sensor measurements to complete the picture. CADRT tactical decision aids are different from most systems in that they are global (displayed immediately to all operators) and update dynamically rather than requiring operator intervention. These include the tools described in the sections below.

Generic Tools

- Cone of Courses
- Torpedo Danger Zone
- Furthest On Circle
- Closest Point of Approach
- Course to Station
- Limiting Line of Approach

ASW Tools

- Passive and Active Target Motion Analysis
- ASW Screens such as Cordon

NGFS Tools

- Elevation Profile
- Call for Fire Dialog Window
 - Grid, Polar, and Shift Missions
 - Danger Close/Friendly Front Lines
 - Coordinated Illumination Plotting
- Geographic Plot of NGFS Picture
 - Spotter and Target Position
 - Observer Target Line
 - Gun Target Line
 - Illumination and Safety Offsets
 - Friendly Front Lines

CBR Tools

- Chemical/Biological Burst and Aerosol Plots
- Nuclear Detonation Plot/Point Romeo Calculation

Weapon Overlays

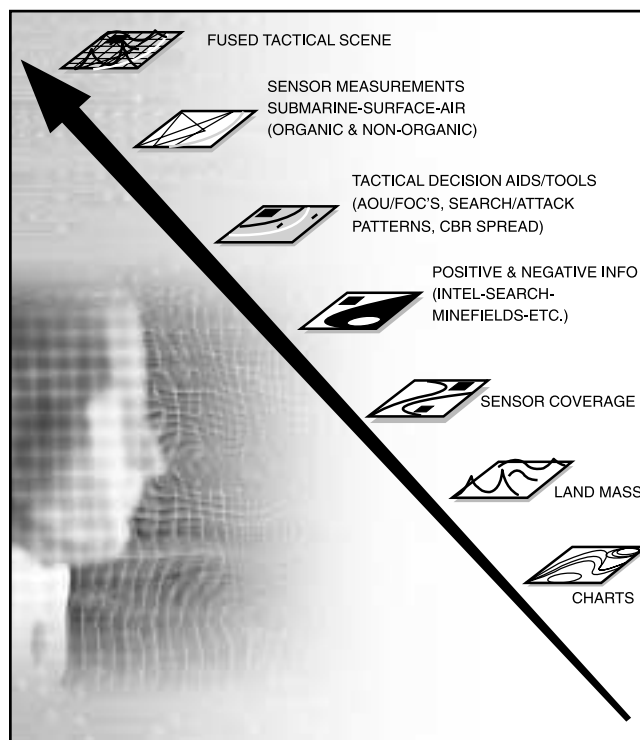
- Harpoon Bearing-Only Launch (BOL) and Range-Bearing Launch (RBL) Templates
- Torpedo Dogboxes

Search and Rescue Tools

- Creeping, Expanding Square, and Parallel Searches
- Drift Calculator for Parachute Bailout
- Hot Key Man Overboard Response

Graphic Tools

- Powerpoint type drawing package
- Schedule graphics to hide/appear/change color
- Graphics can be attached to moving objects



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(540) 653-8153

WWW: nswc.navy.mil

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